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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/988,388	11/19/2001	Bruno Motzet	1748X/50610	8243

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EXAMINER	
KERNS, KEVIN P	

ART UNIT	PAPER NUMBER
1725	

DATE MAILED: 12/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/988,388	MOTZET ET AL.	
	Examiner	Art Unit	
	Kevin P. Kerns	1725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 October 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 February 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3 and 6-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Gonjo et al. (EP 0 861 802 A2).

Gonjo et al. disclose a fuel reforming apparatus and process for using the reformer to produce hydrogen from hydrocarbons/alcohols, in which the apparatus/process includes a reforming portion 4, an evaporation portion 2 having plural evaporation stages, a normalizing stage that includes heat transfer fins 27 and a catalytically heated reactor (6a,6b), and a control unit that includes valves and temperature sensors in the flow lines (abstract; columns 6-9 and 11-38; and Figures 1-7, 9-16, and 18-26).

With regard to independent (apparatus) claim 1, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). Further, the examiner notes that the claimed "intended

use" limitations, such as "for equalizing temperature valleys and peaks of the gas flow to within a temperature range below a maximal allowable reformer inlet temperature" (independent apparatus claim 1) do not have patentable weight in an apparatus claim, as these functional features do not lend further structural detail(s) to this apparatus claim (claim 1). See *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969) that states "Expressions relating to the apparatus to contents thereof and to an intended operation are of no significance in determining patentability of the apparatus claim.". Also see *In re Schreiber*, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997) that states "While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function". See MPEP 2114 and 2115.

3. Claims 1-3 and 6-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Beshty (US 4,946,667).

Beshty discloses a method and apparatus for steam reforming methanol to hydrogen, in which the method/apparatus includes a reformer 18, a vaporizer 11 that feeds a burner/superheater (13,14), forming plural evaporation stages, a normalizing stage as a portion of the superheater 13, serving as heat transfer means, and a control unit that includes valves and temperature sensors in the flow lines (abstract; column 1, lines 10-14; column 2, lines 27-68; column 3, lines 1-3 and 15-68; column 4, line 1 through column 6, line 8; and Figures 1-6).

With regard to independent (apparatus) claim 1, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). Further, the examiner notes that the claimed "intended use" limitations, such as "for equalizing temperature valleys and peaks of the gas flow to within a temperature range below a maximal allowable reformer inlet temperature" (independent apparatus claim 1) do not have patentable weight in an apparatus claim, as these functional features do not lend further structural detail(s) to this apparatus claim (claim 1). See *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969) that states "Expressions relating to the apparatus to contents thereof and to an intended operation are of no significance in determining patentability of the apparatus claim.". Also see *In re Schreiber*, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997) that states "While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function". See MPEP 2114 and 2115.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Gonjo et al. (EP 0 861 802 A2) or Beshty (US 4,946,667).

Gonjo et al. and Beshty individually disclose the features of independent claim 1 above. Although neither of these references specifically discloses that the normalizing stage is an adiabatic stage, one of ordinary skill in the art would have recognized that the use of an adiabatic stage would result in higher efficiency due to the system retaining heat produced in the process, so that this heat would be used to provide energy to another portion of the reformer.

7. Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamashita et al. (US 2002/0031450).

Yamashita et al. disclose a device and method for controlling a reformer by stabilizing the temperature of the reforming portion, in which the device and method includes providing a reformer to produce hydrogen from hydrocarbons/alcohols, in which the apparatus/process includes a reforming portion 4; an evaporation/combustion portion (6,7) with each portion having an evaporation stage; a normalizing stage that includes heat/temperature stabilizing means, such that peaks/valleys in temperature of the gas flow are normalized prior to injection into the reforming portion inlet; and a control unit that includes temperature sensors in the flow lines operable to regulate temperature (abstract; paragraphs [0003], [0012]-[0024], [0031]-[0049], [0061]-[0065], and [0082]-[0089]; and Figures 1-5). Although not specifically disclosed by Yamashita et al., one of ordinary skill in the art would have recognized that the temperature normalizing stage would be connected between the evaporator and the reformer, as the normalizing stage includes a combustion portion 6 cooperating with a vaporizing portion 7, as these components (6,7) are coupled together for heat exchange, with the combustion portion 6 also producing steam (vaporization) to flow to the vaporizing portion 7, as heat generated in combustion portion 6 is used to heat and vaporize reformate fuel in a controlled manner (paragraph [0045]). Although Yamashita et al. does not specifically disclose that the normalizing stage is an adiabatic stage, one of ordinary skill in the art would have recognized that the use of an adiabatic stage would result in higher efficiency due to the system retaining heat produced in the process, so that this heat would be used to provide energy to another portion of the reformer.

With regard to independent (apparatus) claim 1, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). Further, the examiner notes that the claimed "intended use" limitations, such as "for equalizing temperature valleys and peaks of the gas flow to within a temperature range below a maximal allowable reformer inlet temperature" (independent apparatus claim 1) do not have patentable weight in an apparatus claim, as these functional features do not lend further structural detail(s) to this apparatus claim (claim 1). See *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969) that states "Expressions relating to the apparatus to contents thereof and to an intended operation are of no significance in determining patentability of the apparatus claim.". Also see *In re Schreiber*, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997) that states "While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function". See MPEP 2114 and 2115.

Response to Arguments

8. The examiner acknowledges the applicants' amendment received by the USPTO on October 20, 2004. The amendment overcomes prior objections to the drawings, specification, and claim 5. The amendments to the claims have overcome the 35 USC

102(b) and 35 USC 103(a) rejections based on JP 4-187502 and JP 3-199102, since a "normalizing stage" implies that a temperature sensor of claim 8 (lacking in both Japanese references) be present. Claims 1-16 remain under consideration in the application.

9. Applicants' arguments with respect to claims 1-16 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Hirata reference is also cited in PTO-892.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kevin P. Kerns whose telephone number is (571) 272-1178. The examiner can normally be reached on Monday-Friday from 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (571) 272-1171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kevin P. Kerns Kevin Kerns 12/12/04
Examiner
Art Unit 1725

KPK
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December 12, 2004